



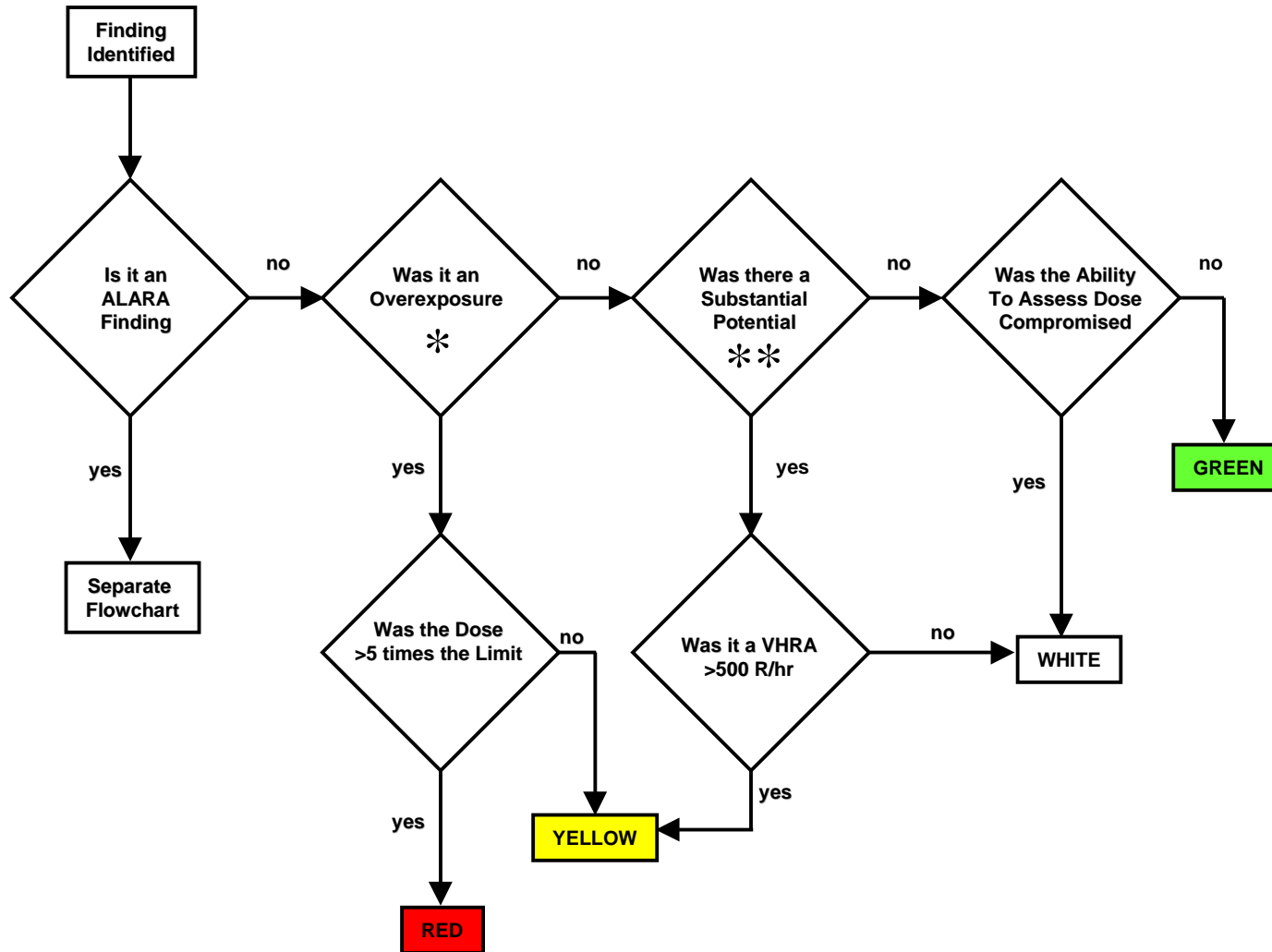
Occupational Radiation Safety

Significance Determination Process



SDP SUMMARY

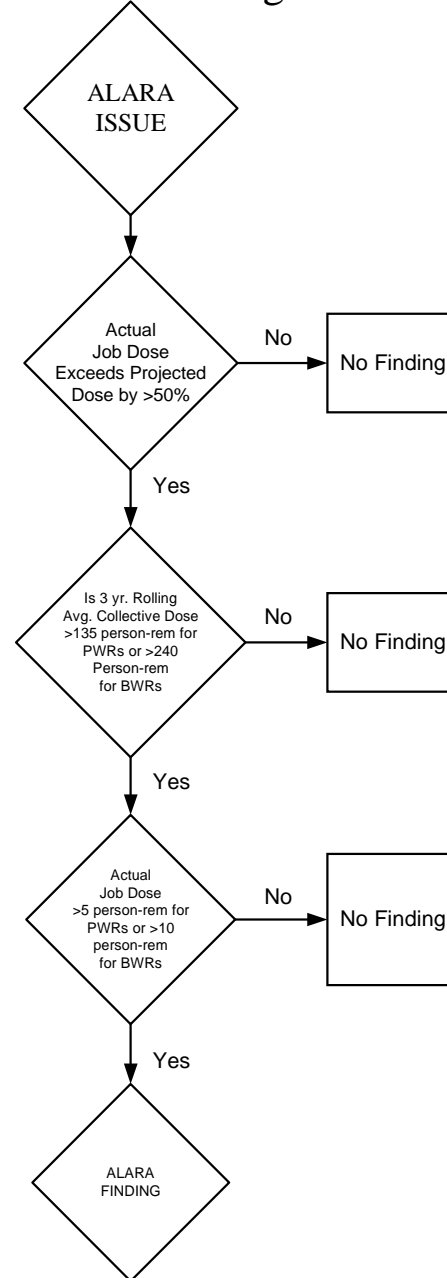
- A possible Inspection Finding is processed through the SDP flowchart
- The result will be either **GREEN** **WHITE** **YELLOW** or **RED** depending on the magnitude of the Dose Equivalent exposure, the potential for more serious consequences or the licensee's ability to assess dose
- The Significance of the PI was based solely on the number of occurrences, irrespective of their severity
- The SDP evaluates the Significance of Inspection Findings based on the magnitude of actual or potential doses



- * If it is an overexposure attributable to a DRP (Hot Particle) in excess of the OE enforcement discretion (75 μ Ci-hr), then the finding is WHITE.
- ** There is no Substantial Potential for Overexposure (SPO) Finding for a DRP. Such a possibility is outside the scope of the SDP.

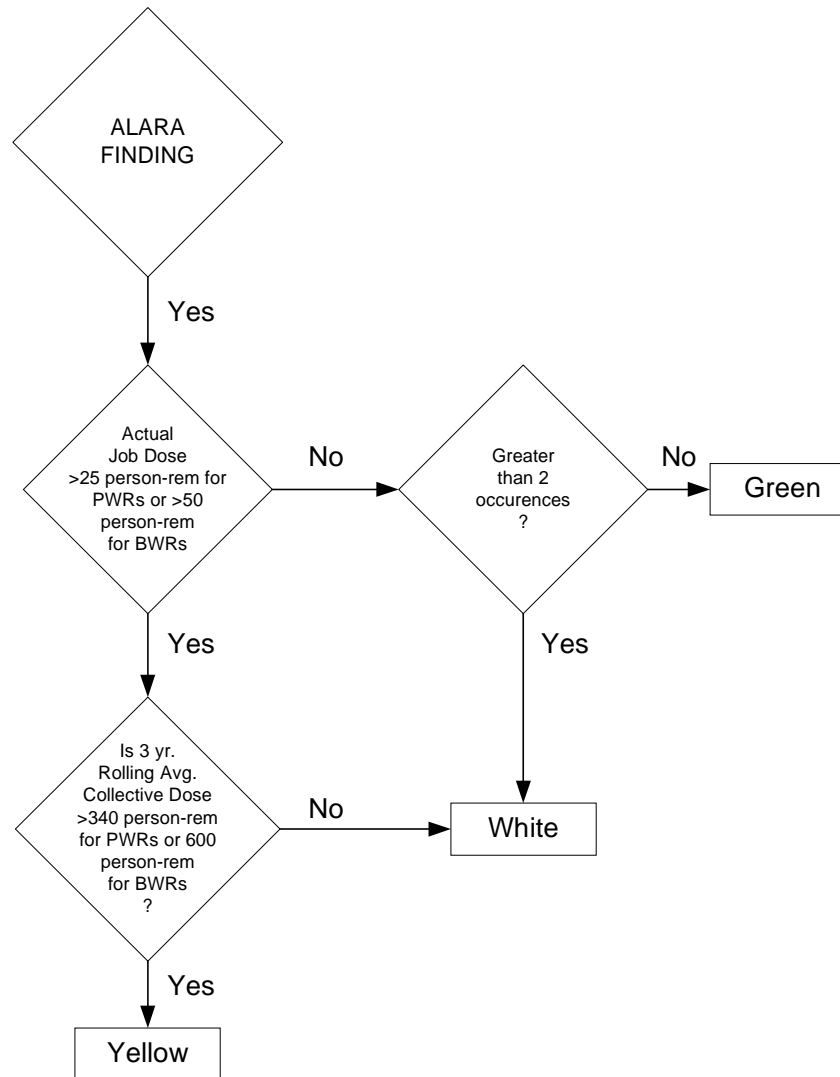


ALARA Finding Screening





Occupational Radiation Safety (ALARA)





Occupational Radiation Safety

Significance Determination Process

Examples



Occupational Radiation Safety SDP Example #1

- Upon exiting the spent fuel transfer canal during a job of removing debris from the canal floor (maximum general dose rates of 2 rem/hr), two workers had nasal smears with measurable contamination. The workers were only half finished but were exiting to take a short break. The pre-job surveys did not find airborne radioactive material; therefore, no controls to limit the intake of materials were specified on the RWP. The investigation of the event determined that both workers had intakes of transuranic radio-nuclides resulting in a bone surface dose in excess of 35 rem each.
 - a) Is this a Violation?
 - b) Is this a Performance Indicator hit?
 - c) What is the significance (color) of this finding? Why?



Occupational Radiation Safety SDP Example #2

- While passing by a roped area with flashing lights, an NRC inspector notices that several stanchions, along with barrier ropes and signs, have been knocked over on the floor along one side of the area. The signs are laying face-down on the floor and cannot be read. The inspector notifies the HP office of the situation and determines that the posting for the area is “Caution: High Radiation Area” and that the maximum radiation levels are 800 mrem/hour. The inspector is told that this is the fourth time in two weeks that the stanchions have been found knocked over, and that an HP technician will be dispatched to correct the problem as soon as one is available.
 - a) Is this a Violation?
 - b) Is this a Performance Indicator hit?
 - c) What is the significance (color) of this finding? Why?



Occupational Radiation Safety SDP Example #3

- An HP foreman at a PWR that has been permanently assigned a master key to HRAs by the RPM, gives it to a HP technician and tells him to unlock and enter the reactor cavity to verify that temporary lighting has been installed.
 - a) Is this a Violation?
 - b) Is this a Performance Indicator hit?
 - c) What is the significance (color) of this finding? Why?



Occupational Radiation Safety SDP Example #4

- In No. 3 above, neither the foreman or the technician knew that the thimbles were withdrawn from the core. Dose rates in the area were in excess of 500 rads/hr. Unaware of the dose rates the technician entered area to adjust the lighting. As a result of the entry the technician received 30 rem DDE to his upper leg.
 - a) Is this a Violation?
 - b) Is this a Performance Indicator hit?
 - c) What is the significance (color) of this finding? Why?



Occupational Radiation Safety SDP Example #5

A work package has been put together to replace a valve in an overhead piping run in a PWR containment. The maintenance department notified RP of this work package one week before the start of a planned refueling outage in which a 10 year ISI was to be performed. Because of the number of maintenance packages to be performed during the outage and due to the lateness of the submittal of the work package, an inadequate ALARA review was performed for the job. The pre-job dose estimate of the valve replacement was estimated to be 20 person-rem. The pre-job briefing did not include a description of the working conditions in the vicinity of the valve. A job in the same area had been performed two days before, but the scaffolding used to perform this job had already been taken down. Scaffolding had to be erected again in this area to access the valve. When the insulation was removed from the RCP to perform the ISI work, this resulted in an increase in the dose rates where the workers were replacing the valve. The resulting total dose for the valve replacement was 32 rem. The three year rolling average collective dose for this PWR is 180 person-rem.

- a) Is this a violation?
- b) Is this a Performance Indicator hit?
- c) What is the significance (color) of this finding: Why?